

Remarks

The present response is submitted in reply to the Office action which was issued on June 4, 2007. Claims 1-13, 15 and 16 are pending in this application. By the present response, claims 1 and 15 have been amended, as discussed below. No new matter has been added.

Rejection of claims 1-9, 12, 13, 15 and 16 under 35 U.S.C. 102(b)

Claims 1-9, 12, 13 and 16 have been rejected under 35 U.S.C. 102(b) as being anticipated by European Patent No. 0735122 A2 (Inagi, et al.) for the rationale set forth in the previous Office action dated April 25, 2006. In particular, according to the Examiner, Inagi, et al. teach each and every feature of the present invention set forth in claims 1-9, 12, 13 and 16. Specifically, the Examiner states that Inagi, et al. disclose an adhesive base material comprising a polymer obtained by polymerizing a glucosloxy alkyl (meth)acrylate, a hydroxyalkyl (meth)acrylate and a polyfunctional monomer. The Examiner also states that Inagi, et al. teach that the examples of hydroxyalkyl (meth)acrylate include 2-hydroxyethyl (meth)acrylate and hydroxypropyl (meth)acrylate, which are readable as component "a) – polar methacrylates" in present claim 1. The Examiner essentially goes on to argue that every limitation of claims 1-9, 12, 13 and 16 are disclosed by Inagi, et al.

Claim 15 has been rejected under 35 U.S.C. 102(b) as also being anticipated by Inagi, et al. for the rationale set forth in the Office action dated October 19, 2006. In particular, the Examiner argues that Inagi, et al. disclose that the adhesive base material can also be used in a form deposited on a commercially available support and that illustrative usable examples include plastic sheets made of polyethylene, polypropylene,

an ethylene-vinyl acetate copolymer, vinylon, a polyester, polyurethane, nylon or the like, non-woven fabrics made of rayon, a polyester or the like; and woven fabrics made a polyester, an acrylic resin, silk, cotton or the like (page 5, lines 39-42).

The Applicants respectfully disagree with the Examiner's conclusion and submit that the present invention is patentably distinct from the invention disclosed in the Inagi, et al. reference. Moreover, the Applicants submit that each and every feature set forth in these claims is not taught or disclosed by the cited reference, and therefore the reference does not anticipate the present invention as set forth in claims 1-9, 12, 13, 15 and 16.

The Applicants submit that claim 1 has been amended to have closed language and to clearly define a polymer composition that does not contain a glucosyloxy alkyl(meth)acrylate. The polymer composition of the present invention and the polymer composition according to Inagi, et al. are not identical in all of the respective limitations. Therefore, the reference of Inagi, et al. simply does not anticipate the presently claimed invention, as explained below.

It is submitted that the Inagi, et al. reference pertains to an adhesive material that comprises a cross-linked polymer which was obtained by polymerization of specific monomers. The adhesive material disclosed therein has good adhesion to skin and can be utilized for medicinal patches, medicinal pads and medicament-impregnated dermatologic medicines (see Abstract). The object of the adhesive material of Inagi, et al. is to provide an adhesive material, in particular for transdermal therapeutic systems, which meets certain requirements, namely, sufficient solubility of the medicament, the speed of crosslinking reaction and swellability. For these purposes, a polymer was used

that was obtained by polymerization of specific monomers, namely, glucosyloxyalkyl (meth)acrylate, a hydroxyalkyl (meth)acrylate, an alkyl (meth)acrylate and polyfunctional monomers. The polyfunctional monomers may be any monomers comprising at least two functional groups per molecule. Inagi, et al. also teach an adhesive base material comprising a polymer obtained by polymerizing a glucosyloxy alkyl(meth)acrylate, a hydroxyalkyl (meth)acrylate, an alkyl (meth)acrylate and a polyfunctional monomer. This adhesive base material has good swelling properties and exhibits excellent adhesion to skin (see Abstract of Inagi, et al.).

In contrast, the present invention concerns chemically inert pressure-sensitive adhesives having an improved tack on polar and semipolar substrates, such as glass, metal, polycarbonate and the like, as set forth in claim 1. These pressure-sensitive adhesives are inert to chemicals and moisture, and do not display any perceivable reaction upon contact to isocyanate-containing compounds. These requirements are met by pressure-sensitive adhesives that are based on copolymers of methacrylates and acrylates, in particular polar acrylates or methacrylates. The poly groups of the acrylates are of crucial importance for obtaining a high tack in that hydrogen bonds are built between the adhesive and the substrate. Hence, acrylates with Zerewitinoff hydrogens are important. Support for the foregoing can be found in the specification, such as at paragraphs [000027], [000029], [000038] and [000039].

Therefore, the disclosure of Inagi, et al. differs from the present invention as currently claimed in that Inagi, et al. teach different polymer compositions and address different purposes. The Applicants also respectfully emphasize that the adhesive base

material of Inagi, et al. has excellent swelling properties, as discussed below. Swelling of a polymer causes loss of cohesion and may lead to cohesive failure (as discussed in paragraph [0007] of the present specification). In contrast, the present invention provides a pressure sensitive adhesive that is inert to moisture, i.e., is not affected by moisture (support for which may be found in the specification at, for example, paragraph [00009]). In turn, the pressure-sensitive adhesive does not swell if exposed to moisture.

The Applicants again submit that Inagi, et al. teach an adhesive base material comprising a polymer obtained by polymerization of (1) a glucosyloxy alkyl (meth)acrylate, (2) a hydroxyalkyl (meth)acrylate, (3) an alkyl (meth) acrylate and (4) a polyfunctional monomer. At page 2, line 54, Inagi, et al. states that the polymer with the desired properties of the invention thereof is obtained by polymerization of the aforementioned “specific four (emphasis added) monomers” (i.e., certain members of the characterized classes of monomers). In other words, the polymer according to Inagi, et al. is derived from at least four different monomers (emphasis added), one of those being a glucosyloxy (meth)acrylate, wherein the glucosyloxy group includes various monosaccharides and oligosaccharides with up to 10 saccharide units.

Contrary to the teaching of Inagi, et al., the polymer of the present invention is obtained by polymerizing (1) a polar (meth)acrylate with a Zerewitinoff hydrogen selected from the group consisting of mono-, bi- and polyepoxides, mono-, bi- and polyaziridines and melamine and its derivatives, or of a mixture of two or more of the aforementioned compounds, as defined in claim 1, (2) an apolar (meth) acrylate, and (3) a bi-, tri- or higher functional (meth)acrylate, or of a (poly)functional compound which is

reactive to Zerewitinoff hydrogens and is selected from the group consisting of mono-, bi- and polyepoxides, mono-, bi- and polyaziridines and melamine and its derivatives, or of a mixture of two or more of the aforementioned compounds.

Pertaining to claim 1, part (c), the sum of the listed monomers adds up to 100%-wt., while only an initiator may optionally be added. The addition of polymers other than those listed above is precluded in the presently claimed invention by virtue of the amendment to claim 1, made herein. Hence, the polymer of the present invention is derived only from three different monomers set forth above and in claim 1, none of which is a glucosyloxy (meth)acrylate as set forth in Inagi, et al. Thus, the polymer as described in Inagi, et al. and the polymer of the present invention are not identical since the respective compositions are clearly different and, in turn, every feature of the composition of the polymer according to present claim 1 is clearly not taught and disclosed by Inagi, et al. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (Claims were directed to a process of producing a porous article by expanding shaped, unsintered, highly crystalline poly(tetrafluoroethylene) (PTFE) by stretching said PTFE at a 10% per second rate to more than five times the original length. The prior art teachings with regard to unsintered PTFE indicated the material does not respond to conventional plastics processing, and the material should be stretched slowly. A reference teaching rapid stretching of conventional plastic polypropylene with reduced crystallinity combined with a reference teaching stretching unsintered PTFE would not suggest rapid

stretching of highly crystalline PTFE, in light of the disclosures in the art that teach away from the invention, i.e., that the conventional polypropylene should have reduced crystallinity before stretching, and that PTFE should be stretched slowly.). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). (MPEP Section 2141.02).

As noted in an earlier Office action response, the Applicants submit that this difference between the two compositions, which at first might only appear to consist of omitting one additional monomer, is in actuality a substantial difference when one compares the properties of the respective resulting polymers. The polymer of Inagi, et al. has excellent skin adhesion properties and swelling properties when impregnated with a solvent, i.e., a swelling rate of at least 300% (Inagi, et al. – page 2, lines 53, 54; page 5, line 12). The present polymer also has excellent adhesion, but in connection with polar and semi-polar substances, such as glass, metal and polycarbonate (paragraphs [00002] and [00003] of the present specification). Furthermore, the present invention is inert to chemical influences and moisture (paragraph [00008]) and does not swell, since swelling would result in cohesive failure or detachment of the adhesive from the surface (paragraph [00007]).

As noted above, the polymer of Inagi, et al. fails to teach each and every limitation of claim 1, as well as those of dependent claims 2-9, 12, 13 and 16, and therefore the reference fails to anticipate the presently claimed invention as set forth in independent

claim 1 and the claims dependent therefrom. Regarding claim 15, which defines a process for the production of pressure sensitive adhesive tapes, the Applicants respectfully reiterate the arguments set forth above in connection with claim 1, and submit that the cited reference also fails to anticipate claim 15 for the reasons that it fails to anticipate independent claim 1. Withdrawal of the present rejection is respectfully requested.

Rejection of claims 10-11 and 15 under 35 U.S.C. 103(a)

Claims 10-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inagi, et al. in view of U.S. Patent No. 6,713,641 (Weaver, et al.) for the rationale set forth in the previous Office action dated April 25, 2006. In particular, according to the Examiner, Inagi, et al. teaches the limitations of claims 10-11, except for the (meth)acrylated polyesters being conversion products of OH-terminated polyesters polyols with (meth)acrylic acid or reaction products of carboxyl groups-containing polyester polyols with hydroxyl group-containing (meth)acrylates; and (meth)acrylated polyurethanes being conversion products of amine- or hydroxyl-terminated (meth)acrylates with diisocyanates or polyisocyanates.

The Examiner refers to Weaver, et al. which, the Examiner states, discloses a coating composition wherein the polymerizable vinyl compounds comprise a solution of a polymeric, polymerizable vinyl compound selected from acrylated and methacrylated polyesters, acrylated and methacrylated polyethers, acrylated and methacrylated epoxy polymers, acrylated and methacrylated urethanes, and mixtures thereof, in a diluent selected from monomeric acrylate and methacrylate esters (claim 17; col. 25, lines 24-31).

The Examiner states that the acrylated and methacrylated polymers and oligomers typically are combined with monomers, which contain one or more acrylate or methacrylate groups, such as monomeric acrylate and methacrylate esters, and serve as reactive diluents. The Examiner still further argues that the unsaturated polyesters, which are prepared by standard polycondensation techniques known in the art, are most often combined with either styrene or other monomers, which contain one or more acrylate or methacrylate groups and serve as reactive diluents (col. 13, lines 9-17).

The Examiner concludes that it would have been obvious to one having ordinary skill in the art to incorporate acrylated and methacrylated polyesters and acrylated and methacrylated urethanes as taught by Weaver, et al. in Inagi, et al.'s pressure sensitive adhesive polymer composition because such combination with acrylate and methacrylate esters are suitable as adhesive and coating for such substrates as metals, aluminum, steel, plastics, glass, wood, paper and leather and would thus arrive at the subject matter of instant claims 10-11 and 15. The Examiner also argues that the cited prior art references are analogous art because they are from the same field of endeavor concerning coating and pressure sensitive adhesive polymer compositions.

The Applicants respectfully submit that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all of the claim limitation. The Applicants respectfully submit that one skilled in the art would have no suggestion or motivation to

combine the aforementioned references in order to arrive at the present invention. Additionally, even if one skilled in the art were to consider Inagi, et al. alone, or in combination with Weaver, et al., each and every limitation of the present invention would not be disclosed, nor would there be a reasonable expectation of success if the aforementioned references were to be considered.

The Applicants respectfully disagree with the Examiner's opinion for at least the deficiencies of Inagi, et al., as discussed above. As noted above, Inagi, et al. fails to each and every limitation of the presently claimed invention. Moreover, the respective polymers differ in their respective properties. To again reiterate, the polymer of Inagi, et al. has good swelling properties and excellent adhesion, preferably on the skin, and is intended to be used in medical applications. On the other hand, the polymer of the present invention is inert to moisture and chemical influences, has excellent adhesion on polar or semi polar surfaces (rather than on skin) and is intended to be used in technical applications, such as connecting glass, stone and the like.

Consequently, it is respectfully submitted that one skilled in the art would not have considered the disclosure of Inagi, et al. to arrive at the presently claimed invention since the teachings of Inagi, et al. concern a very different area of expertise and application. In other words, one skilled in the art would not have considered Inagi, et al.'s disclosure which concerns a different area of expertise and application, to obtain polymers with the special characteristics as described in the present invention. Hence, one of ordinary skill in the art would not have considered the Inagi, et al. disclosure as the closest prior art, especially since polymeric chemistry is generally based on empiric

knowledge. As set forth in MPEP Section 2144.08(e), one must [c]onsider the predictability of the technology. See, e.g., *Dillon*, 919 F.2d at 692-97, 16 USPQ2d at 1901-05; *In re Grabiak*, 769 F.2d 729, 732-33, 226 USPQ 870, 872 (Fed. Cir. 1985). If the technology is unpredictable, it is less likely that structurally similar species will render a claimed species obvious because it may not be reasonable to infer that they would share similar properties. See, e.g., *In re May*, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) (*prima facie* obviousness of claimed analgesic compound based on structurally similar prior art isomer was rebutted with evidence demonstrating that analgesia and addiction properties could not be reliably predicted on the basis of chemical structure); *In re Schechter*, 205 F.2d 185, 191, 98 USPQ 144, 150 (CCPA 1953) (unpredictability in the insecticide field, with homologs, isomers and analogs of known effective insecticides having proven ineffective as insecticides, was considered as a factor weighing against a conclusion of obviousness of the claimed compounds). However, obviousness does not require absolute predictability, only a reasonable expectation of success, i.e., a reasonable expectation of obtaining similar properties. See, e.g., *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

As the Inagi, et al. reference should clearly not be considered as prior art, one skilled in the art would have had no reason to combine the teachings of the disclosure therein with those of Weaver, et al. Furthermore, the combination of both disclosures would still lead to compositions containing glucosyloxy alkyl (meth)acrylate with properties that would likely resemble those of the composition disclosed by Inagi, et al. On the other hand, it would be questionable whether such proposed compositions would

share characteristics such as those of the present invention.

The Applicants respectfully submit that Weaver, et al. pertains to blue diolanthraquinone dyes having excellent thermostability, and which are copolymerized with polyester. Thereby, blue polyesters are generated that are useful for manufacturing photographic plates, in particular for X-ray photos.

Weaver, et al. teach (with reference to claims 12 and 15-17) a coating composition comprising (i) one or more polymerizable vinyl compounds comprising a solution of a polymeric, polymerizable vinyl compound selected from acrylated and methacrylated polyesters, acrylated and methacrylated polyethers, acrylated and methacrylated epoxy polymers, acrylated or methacrylated polyurethanes and mixtures thereof, in a diluent selected from monomeric acrylate and methacrylate esters; (ii) one or more anthraquinone colorant compounds having the formula set forth in claim 12 of Weaver, et al.; and (iii) at least one photoinitiator.

Given that the Inagi, et al. reference fails to anticipate the presently claimed invention, as discussed above, it is submitted that the combination with Weaver, et al. fails to make the present invention obvious since the proposed modification would render the prior art unsatisfactory for its intended purpose. As discussed in MPEP Section 2143.01, [i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter

assembly, and wherein a gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.). "Although statements limiting the function or capability of a prior art device require fair consideration, simplicity of the prior art is rarely a characteristic that weighs against obviousness of a more complicated device with added function." *In re Dance*, 160 F.3d 1339, 1344, 48 USPQ2d 1635, 1638 (Fed. Cir. 1998) (Court held that claimed catheter for removing obstruction in blood vessels would have been obvious in view of a first reference which taught all of the claimed elements except for a "means for recovering fluid and debris" in combination with a second reference describing a catheter including that means. The court agreed that the first reference, which stressed simplicity of structure and taught emulsification of the debris, did not teach away from the addition of a channel for the recovery of the debris.). The Applicants therefore submit that one skilled in the art would not have considered Inagi, et al. as an appropriate initial teaching to arrive at the present invention since the

presently claimed invention includes providing a pressure sensitive adhesive that has to be inert to moisture. Given that one skilled in the art would not consider Inagi, et al. as appropriate prior art to start with, the skilled artisan would not combine the teachings of this reference with any other teachings, including Weaver, et al., to solve the problem addressed by the present invention.

The combined view of both prior art references, even if one skilled in the art would have combined them, does not make the present invention as defined in the proposed amended claims obvious to one skilled in the art because none of the two references suggests that the glucosyloxy alkyl (meth)acrylate and/or anthraquinone colorant may be omitted to obtain a pressure-sensitive adhesive which has high tack while simultaneously being inert to chemical influences and moisture.

It should be appreciated that, in this regard, polymer chemistry is a rather empiric field. It should be appreciated that minor changes in reaction conditions and/or monomer composition can lead to polymers with substantially different properties, as noted above. It is not possible for one skilled in the art to predict the properties of a final-product polymer based on the knowledge of the properties and the monomer composition of a given polymer, i.e., one skilled in the art can not predict whether the omission of the glucosyloxy alkyl (meth)acrylate from the monomer composition for a polymer of Inagi, et al. would result in a pressure sensitive adhesive which has high tack while simultaneously being inert to chemical influences and moisture. The skilled artisan would not be able to determine how the properties of the polymer of Inagi, et al., apart from its color, would change if an anthraquinone colorant compound would be

copolymerized.

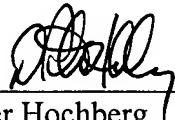
In conclusion, it is respectfully submitted that one skilled in the art would not have considered combining the teachings of the cited prior art to arrive at the presently claimed invention. Withdrawal of this rejection is strongly requested.

Conclusion

In light of the foregoing claims and arguments, it is believed that the present application is in condition for allowance, and such action is earnestly solicited. The Examiner is invited to call the undersigned if there are any remaining issues to be discussed which could expedite the prosecution of the present application.

Respectfully submitted,

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